

14. Diagnosis

General

- If the skid control ECU detects a malfunction in the brake control system (ABS with EBD, brake assist, TRAC, and VSC), the ABS, brake system, master warning lights, slip indicator light and multi-information display the corresponds to the function for which the malfunction has been detected illuminates or indicates, as indicated in the table below, to alert the drive of the malfunction.

○: Illuminate Δ : Indicate

Item	ABS	EBD	Brake Assist	TRAC	VSC
ABS Warning Light	○	○	○	—	—
Brake System Warning Light	—	○	—	—	—
Master Warning Light	—*	—*	—*	○	○
Multi-information Display (Warning Message “CHECK VSC”) 	—*	—*	—*	Δ	Δ

01YCH69Y

*: Failure in the ABS, EBD, and brake assist systems prohibits operation of the TRAC, VSC, systems. Accordingly, the master warning lights and slip indicator light will be illuminated and the “CHECK VSC” message will appear on the multi-information display.

- At the same time, the DTC (Diagnostic Trouble Code) are stored in the memory. The DTC can be read by connecting SST (09843-18040) between the Tc and CG terminals of the DLC3, and observing the blinking of the ABS warning light or the observing the diagnostic code indicated on the multi-information display, connecting a hand-held tester.
- This system has a sensor signal check (test mode) function. This function is activated by connecting the SST (09843-18040) between the Ts and CG terminal of the DLC3 or by connecting a hand-held tester. The ABS warning light blinks at a 0.13-second interval and “VSC TEST MODE” will appear on the multi-information display. This check function performs deceleration sensor check, yaw rate sensor check, master cylinder pressure sensor check, and speed sensor check.

► Display example of the multi-information display ◀



Normal system code is displayed

01YCH70Y



DTC is displayed

01YCH76Y



Test mode is activated

01YCH71Y

- If the skid control ECU detects a malfunction during a sensor signal check (test mode), it stores the DTC in its memory. These DTC can be read during a sensor check operation by connecting the SST (09843-18040) to the Tc and CG terminals of the DLC3 and observing the blinking of the ABS warning light or observing the diagnostic code indicated on the multi-information display, or connecting a hand-held tester.

For details of the DTC that are stored in skid control ECU memory and the DTC that are output through the sensor signal check (test mode) functions, see the 2007 LEXUS ES350 Repair Manual (Pub. No. RM01Y0U).

Diagnosis of CAN

- If a malfunction occurs on a CAN communication line, the skid control ECU is connected to the CAN communication lines and it will store the DTC (Diagnostic Trouble Code) in its memory.
- There are 2-digit DTC and 5-digit DTC for CAN communications related to the brake control system (ABS with EBD, brake assist, TRAC and VSC).
 - 2-digit DTC can be read by connecting the SST (09843-18040) to Tc and CG terminals of the DLC3, and observing the diagnostic code indicated on the multi-information display in the combination meter.
 - 5-digit DTC can be read by connecting a hand-held tester to the DLC3.

Service Tip

The skid control ECU uses the CAN protocol for diagnostic communication. Therefore, a hand-held tester and a dedicated adapter [CAN VIM (Vehicle Interface Module)] are required for accessing diagnostic data. For details, see the 2007 LEXUS ES350 Repair Manual (Pub. No. RM01Y0U).

Fail-Safe

- In the event of a malfunction in the ABS and/or brake assist controls, the skid control ECU prohibits the ABS, brake assist, TRAC and VSC operations.
- In the event of a malfunction in the EBD control, the skid control ECU prohibits the EBD operation. Even in this case, usual braking performance excluding the brake control system (ABS with EBD, brake assist, TRAC and VSC) is secured.
- In the event of a malfunction in the TRAC and/or VSC, the skid control ECU prohibits TRAC and VSC operations
- If a communication malfunction occurs between the skid control ECU, the steering angle sensor, the yaw rate & deceleration sensor or ECM, the skid control ECU stops the TRAC and VSC.
- When the ECM detects the DTC, it will disable the TRAC and VSC operations.